

9 Cultural accounting in the Caribbean

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Introduction

Most small island societies are multi-cultural in that they include peoples of very different ethnic and national origins. Indeed, one of the most pervasive attributes of islands is that the diversity of their populations is often greater than that of much larger continental states (Clarke, 1984). These various populations arrived originally at different eras as a result of successive waves of colonization, new economic opportunities, or political and religious persecution. Although the details may vary, it is not untypical for a population to comprise the descendants of indigenous peoples (who usually arrived by small craft within the last thousand years or so), Europeans (whose ancestors arrived from two to four centuries ago as colonial officials or traders), and an Asian or African population (who were brought subsequently to the island by the European colonialists, as skilled or manual workers, to work in bureaucracies and plantations).

In most cases the present-day structure of the island economy and society reflects these origins, and the similar fortunes of more recent immigrants (Ward, 1989). In terms of economic structure, the descendants of the indigenous population typically form the majority of the farming, fishing and peasant communities; the ex-colonialists own and run commerce, business and the professions, while the descendants of tied labour work in clerical, manual and service occupations. Political organizations are built around extended family and national origins and social relationships, and take account of kinship, family and religious or caste origins. While the details of the picture may vary between societies and change over time, it is beyond dispute that social acceptability, occupation, income distribution and political influence are well correlated

with ethnic identity in many societies. Certainly, this picture is repeated in many islands of the Caribbean, the Pacific and the Indian Ocean, as it is in most metropolitan societies.

The term "cultural matrix" is often used to describe the patterning of economic, political and social relationships, as a function of ethnic identity (Batalla, 1989). Clearly such a notion begs many questions of definition. Nevertheless, everyday observation, especially when ethnicity and gender provide such obvious markers, and statistical data – when they are available – demonstrate that there are systematic differences between the average educational achievements, occupational status, or political roles of culturally identifiable groups. There are, of course, differences across societies as to the importance of ethnicity, the status of particular jobs, the biases of political systems, and so on. Furthermore, over time, populations intermarry, and members of colonized indigenous or subordinated groups may sometimes regain the highest economic, social and political levels.

Although cultures are dynamic and change markedly over the course of generations or centuries, they show considerable inertia over the short and medium-term time horizons for which most economic and social policies are targeted. Even in the face of social policies designed to break down cultural barriers, such as affirmative action initiatives, relative wages and unemployment rates across genders and ethnic groups have often shown marginal improvement. Thus, despite cultural blending, the essential point for this paper is that, in most societies, there is a significant and rather stable correlation between some measure of culture, and measures of economic well-being, social status, and political power. Whenever this is the case, the cultural matrix becomes a valid description of the structure of a multi-cultural society, and also a potentially valuable tool with which to understand it. A description of the structure enables us to analyze changes in the structure.

This paper is concerned primarily with describing one aspect of the cultural matrix – the "cultural economy" or "cultural division of labour", i.e. the part of the matrix which shows the relationship between different cultural groups and the economy (Hechter, 1978). In the context of this paper, the cultural division of labour is the set of economic interactions between culturally identifiable populations. If these populations have markedly different economic characteristics and/or relationships with the economy, then the cultural division of labour is segmented. This segmentation may be both vertical and horizontal. Horizontal segmentation exists on the supply side of an economy when people of particular cultures are associated with particular sectors of production, for example, when indigenous people predominate in tradi-

tional activities – Europeans in manufacturing, Asians in commerce. Horizontal segmentation corresponds to that of the international division of labour. Vertical segmentation arises, for example, when an economy is largely owned and run by Europeans, but operated by indigenous people or non-European immigrants. This corresponds to the classical division between capital and labour. A related characteristic of vertical segmentation arises when there are wage differentials for the same work between people with comparable skills or education, but different ethnicity, gender or religion. Such a marked vertical cultural division of labour implies uneven wealth distribution and social inequalities. Uneven distribution will also arise from the horizontal division of labour if, for example, there is a subsistence traditional sector and a more prosperous modern sector.

This definition of the cultural division of labour also includes characteristics of the demand-side of an economy. This reflects both the material culture of the society, and its political culture. Differences in material culture between sub-groups of a population are reflected in their patterns of consumption and saving, their economic links to the outside world, or their access to public resources. For example, even when they have similar levels of household income, people of different cultures exhibit different savings habits or purchase different types of goods. This may reflect underlying cultural traits, or simply different opportunities. For example, indigenous peoples have fewer opportunities than expatriates to spend or save money abroad. The political culture similarly may exhibit culture-specific biases. Expenditure and employment of public agencies may reflect affirmative action policies. Equally, sub-groups linked through family and ethnic ties to the ruling elites may be favoured by the informal operation of welfare systems, public sector employment, and so on. Similar considerations determine the external economic links of a society. Much development aid is tied in some way to the donor country, often the former colonial power. Most immigrant populations maintain links with their country of origin, for example, by sending a part of their income to their families, or making use of business contacts. In this sense, many external economic relations are also structured by cultural ties.

The cultural accounting method introduced in this paper to describe the cultural division of labour is an extension of the input-output approach. The basic tool of input-output analysis is a table showing the financial transactions between various actors in the economy – i.e. the payments between businesses, workers, households, governments and other countries. Depending on specific details, an input-output table shows for the economy of a nation, region or island, the annual wages

paid to workers and shareholders by production activities (such as agriculture or commerce), the taxes paid to government, welfare payments to households, profits repatriated overseas, and so on. The vital contribution of the input-output method is that it allows the implications of economic structure to be measured – that is, in measuring the impact on a particular economic actor, it takes account of the relationships between all actors in the economy. This is important because the indirect effects of economic change are often greater than the direct effects. It is always hoped, for example, that the opening of a new hotel on a tropical island will create additional wealth throughout the economy, as a result of purchases by hoteliers, tourists and by hotel workers of other goods produced or sold on the island. Sometimes these hopes are not fulfilled because the hotel and tourist shops purchase most of their inputs abroad, pay relatively low wages and claim extended tax holidays. This is often the case in small island economies where the extent of internal linkages between production sectors means that the initial income to the island is not channelled into the rest of the island's economy. The effectiveness of welfare and development aid policies designed to improve conditions for minority and low-income populations is reduced for similar reasons. The usefulness of the input-output method lies in the fact that it enables the consequences of policies designed to increase the income from economic activities to be evaluated.

Aruba

The example selected to demonstrate the construction and utility of a cultural accounting matrix is the island of Aruba, formerly a member of the Netherlands Antilles. This small island, with a population of only sixty thousand, is 20 miles long and lies a similar distance off the Venezuelan mainland. The author was resident there in the early 1980's. The island provides an ideal case study since it exhibits many of the features which make the cultural accounting matrix approach feasible and potentially useful. The way in which the present cultural division of labour has arisen historically will be explained in this section.

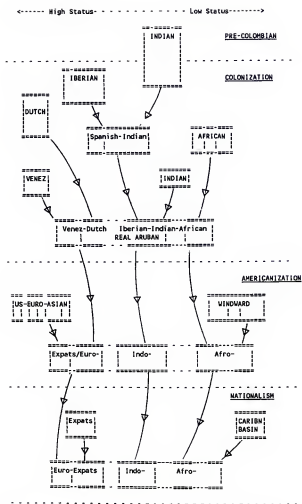
Although the island's population descended from many different nationalities (some 72 were recorded in the 1948 Census of Population), for purposes of the present discussion it is possible to characterize Arubans into three fairly distinct cultural-economic groups; Indian-Arubans, European-Arubans, African-Arubans. Because these groups have different ethnic backgrounds, even casual observation shows there to be a cultural division of labour between them, of the kind described earlier.

The contrasts are striking between the rural hinterland, the "Cunucu" where many of the Indian-Arubans live; the "typical Caribbean" township of Sint Nicholas, where many of the African-Arubans live and also the site of the Exxon oil refinery; and the metropolitan capital of Oranjestad and its adjacent "tourist strip". There are, of course, many other subtle (and less subtle) divisions by race, nationality, language, family and religion which affect the political economy of the island, and the manner in which these factors intertwine has been discussed in more detail elsewhere (Cole, 1985, 1986). Space prohibits full analysis here. Nevertheless, many of the essential ingredients and characteristics of the Aruban cultural matrix can be seen from the following brief discussion.

The history of Aruba can be divided into roughly four phases – pre-Colombian, colonization, Americanization, and nationalism. The relationship between the indigenous and immigrant populations of the island in each of these phases is summarized by Figure 1. In this figure, the time dimension is measured vertically downwards, and the social and demographic development of each cultural sub-group in the socio-economic hierarchy of the island is measured horizontally. The narrower the horizontal distance between groups, the closer is their social relationship.

The archaeological evidence suggests that, during the pre-Colombian era, the island was populated by various Arawak Indians from the Venezuelan mainland (Nooyen, 1955). These people appear often to have been temporary residents engaged in fishing expeditions or escaping conflicts with stronger groups. These Indians survived both the subsequent Spanish and Dutch periods of colonization mainly because the island had little to exploit, because a papal Bull prevented the Spanish from using Indians as slaves, and because the Dutch West India Company limited settlement on the island for many years. In the early part of the 19th century Dutch merchants and their African slaves arrived from the neighbouring island of Curaçao. Indians in Aruba were not permitted to own African slaves – instead they brought captured "Red Indians" from the mainland. Although a land distribution programme after emancipation in the 1860's was designed to encourage the Africans to leave, many remained on the island. Eventually, this population was joined by "high-class" Spanish refugees fleeing the civil war in Venezuela late in the century.

By the end of the era of colonization, the lower class Iberian immigrants and Indians had merged towards an inter-racial Papiamentospeaking population, basically a peasant community. The economic and social elite of the island comprised the Dutch and high-born Spanish, mainly merchants (or smugglers) and administrators, and the core of the



Note: Time is measured vertically. Socio-economic status is measured horizontally. ===== and ----- indicate strong and weak socio-cultural ties respectively.

FIG. 1. The four development era of the Aruban culture

island's patriarchal families. The island saw relatively little industrial activity, apart from some gold and phosphate mining. Indeed for most of the nineteenth century, the island had been so poor that up to half of the men had to work abroad in sugar plantations on the mainland, while the women tended the homesteads (Hartog, 1958). The descendants of these immigrants today make up the "real Aruban" population – which for brevity is characterized here by its "European" and "Indian" components, the latter providing the core of the present-day Indian-Aruban population. For this phase of the development of the Aruban culture, Figure 1 summarizes how the indigenous Arawak population melded with the lower class Iberians and the emancipated African slaves, but established a more or less parallel society with the Dutch and upper-class Spanish immigrants.

In the 1920's an American-owned oil terminal was set up in the island to tranship and refine oil from the nearby Maracaibo basin. By World War II, this had become one of the largest Exxon oil refineries in the world. The arrival of the refinery transformed the island (Hartog, 1958). Because of their commercial skills, the European-Arubans could take advantage of the opportunities offered by the arrival of the refinery, and the enormous flood of new immigrants which followed. The Indian-Arubans, in contrast, had few relevant skills or experience, and so, although some took unskilled jobs in the refinery, their lives continued to revolve around their homesteads. In addition, they had access to "hand-outs" channelled through extended family arrangements and casual work. And, because the refinery was so large and the island's population so small, even the peasant lifestyle was dramatically changed (Hartog, 1958).

With an insufficient local labour force, the refinery instead recruited English-speaking skilled workers from the Dutch Windward Islands and the British West Indies. These were largely people of African origin whose skills had evolved from the gang labour of the slave plantations and the sugar refineries. After emancipation, many had worked on American-owned plantations in Cuba which employed technologies closely related to those then used in oil refining. These immigrants – the pick of the Caribbean labour force, sometimes referred to as "Windward Arubans" – became the core of the African-Aruban population. They provided the skilled industrial labour force but, perhaps as result of the disruptive experience of the plantation economies, few management or entrepreneurial skills (Paula, 1972). Because, in the 1920's, the United States was extremely racist, there was a complete separation in Sint Nicholas between the West Indian immigrants and the white American expatriate managers of the refinery. The latter isolated themselves

within a well appointed compound (Hartog, 1958). Thus, despite their economic skills, these immigrants formed the bottom of the social ladder. The refinery management was encouraged to favour the employment and training of Arubans, over West Indians.

Immigrants of many other races and nationalities – Asian, European and Middle-Eastern, and other Dutch colonies, such as Suriname – arrived to work in the refinery and to develop new commercial activities. Although, there were clear social divisions between these nationalities too, most of these immigrants had experienced a metropolitan economic culture, and they shared the ability to operate as entrepreneurs in the rapidly expanding economy. For the sake of simplicity here, all these will be characterized as belonging to the European-Aruban group – together with the European Real Arubans. Within this group, however, the superior skills and contacts of the new Europeanized immigrants enabled them to become the dominant commercial force on the island (Romer, 1978). Furthermore, although many of these people settled on Aruba, a social distinction is maintained between Real Arubans and newcomers, including second generation immigrants.

The period of nationalism began after the war. This involved a gradual rationalization of the oil refinery with the loss of many jobs (particularly among Afro-Arubans), a diversification of the economy to include tourism, failed efforts at import substitution, off-shore financial activities, a Dutch-style public works and education sector, and a new consolidation of the Aruban identity. Most of the major new economic activities resulted from foreign investment or development aid projects. There was relatively slow change in the division of labour. The unskilled labour required for the tourist industry typically comprised Indian- and African-Arubans, with a small expatriate senior management, and European-Aruban middle management. Related local and expatriate-owned businesses, such as bars and restaurants, developed around the tourist industry. Other new activities, particularly off-shore taxation and banking, employed the better educated Arubans produced by the new schooling system. Over this post-war period, with better education, a greater diversity of economic activity, and negotiations to achieve "status apart" from Holland and Curaçao (Cvejanovich, 1985), some of the sharper segmentations in Aruban society began to blur. Nevertheless, ethnic differences, economic skills (including language) and kinship continued to contribute to the functioning of the economy.

By the late 1970's the cultural division of labour – to be presented in quantified manner in the next section of this paper – was established. Expatriates and European-Arubans occupied management and professional positions, African-Arubans occupied domestic and service posi-

tions, as well as many professional and technical professions, while Indian-Arubans predominated in production and rural employments, as well as in commercial and clerical positions and in public works. The situation is summarized by Table 1. The total population of the island in 1980 was approximately sixty thousand. The three Aruban groups each make up about 35, 20 and 40 per cent of households respectively, with expatriates accounting for the remaining 5 per cent.

A cultural accounting matrix

The layout of the cultural accounting matrix is shown in Table 2. The entries in the table are amounts of money paid by different economic actors, production activities, household, government, and so on, to each

Table 1. Summary of dominant socio-ethnic divisions and economic roles

	Euro-Aruban/Expat		Indo-Aruban		Afro-Aruban	
Origin	European American Asian	Dutch Iberian	Indian	African	Windward	Caribbean
Arrival	1925-80	1650-1900	- 1850	1800-50	1930-50	1970-80
Economic Role	Entrepreneur Administration Management		Self-Employed Labouring Clerical		Skilled Technical	Unskilled Domestic
Sector	Commerce Refining Tourism Government		Government Manufacturing Commerce Construction		Refining Tourism Informal	Service Informal
Religion	Protestant (various) Other		Catholic		Protestant (various)	
Language	English Dutch	Dutch Papiamentu Spanish	Papiamentu Dutch	English Papamianto	English Spanish	
Settlement	Oranjestad Enclave	Oranjestad	Cunucu Santa Cruz		Sint Nicholas Oranjestad	

Note: The activities shown overlap across ethnic categories.

other over the course of a year. In the table, the top-left entries are payments between production activities in the economy; the entries below this show payments to workers, entrepreneurs and owners; the adjacent entries show how these are distributed to households and firms (as legal entities) and so on. The row and column totals for each activity are their total income and expenditures respectively in the course of a year. Obviously, these should be equal, any imbalances in current annual expenditures being represented by a saving or borrowing from their capital account. The key characteristics of the cultural division of labour have been described earlier, so it is only necessary now to highlight how these are revealed by the actual entries appearing in the Aruba cultural accounting matrix shown in Table 3. Blocks of data which are of special interest from the point of view of the cultural division of the economy have been highlighted.

For present discussion, the division of households into cultural groups is the most important feature of the table. As discussed above, the population is divided into Indian-Aruban, African-Aruban and European-Aruban households, with expatriate households treated as a separate group. The total income of each of these groups is shown in the corresponding row totals (A) as 165, 67, 317 and 90 million respectively (note that amounts in the table are in tens of thousand Antillean guilders). Given the proportions of households noted earlier, this suggests that the income of expatriate households is about three times that of European-Arubans, and about five times that of Indian- and African-Arubans.

Household income comes from a number of sources, wages and salaries, entrepreneurial and profit income, public welfare and pensions. The distribution of these various sources of income by sector of origin and type of household defines the horizontal and vertical cultural division of labour on the island. The table is arranged to show the distribution of wages and salaries to employees from the different cultural groups (B). The shares of total wage and salary income commanded by these groups of employees are 26, 14, 49 and 11 per cent respectively.

Production activities are subdivided into agriculture and local industry (combined), oil refining, public and private utilities (combined), construction, retail and wholesale commerce (combined), tourism, and services. The table shows that the relative share of income paid to each cultural group by these sectors varies markedly, reflecting both the vertical and the horizontal division of labour. For example, Afro-Arubans earn about 5 per cent of the total wage income from the commerce sector, but 16 per cent of the total wage income from services. Indo-Arubans earn 24 per cent of the wage income from commerce and 22 per cent of

Table 2. Aruba cultural accounting matrix

Definition of Accounts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1 Agri./industry	1875	789	585	1411	510	296	2579					2758	1154	409	548	199	392		10	100	404	397		18099
2 Oil refinery			3358		10	10						270	110	49	126				1589			395599		401901
3 Utilities	207	1951	203		105	1337	413					764	316	125	247	104								6900
4 Construction	821	2542	10	10	414	10	2250			F		75	25	30	163	51	101	113	203	484				7500
5 Trade	3518	498	394	813	10	199	1602					4887	2057	688	672	100	198		10	101	2853	2607		27399
6 Hotels/restaurants	10	98	10	10	10	10	1080					395	162	67	146				10		11499			14102
7 Other services	1710	896	492	611	507	2396	3807					1734	694	349	1079	3615	297			101	2957	3413		27800
8 Indo-labour	632	1577	681	1060	1141	686	1648					6	1	6	42									10232
9 Afro-labour	312	747	52	458	222	568	1224			B		45	7	42	203	748	357							5515
10 Euro-labour	850	3636	386	1231	2770	2196	3571					13	2	12	83									19026
11 Expat-labour	310	882	97	189	611	417	1032									552	263							4426
12 Indo-households	215			195	2237	251	904	10102								315	1272			745				16532
13 Afro-households	30	D		22	221	16	317			C						52	164			223				148
14 Euro-households	582			192	7664	415	1803		5476	18355						158	616			482				31665
15 Expat-households	146			651	83	2827	191	922		4017				H						119				8991
16 Island government	964	3576	1743	282	5229	833	733					1153	447	272	1941				1191					16931
17 Central governments				/								396	151	102	423	4831			202		2098	182		9500
18 Household capital												879	358	160	413				104					3356
19 Firms' capital	302	3785	591	589	811	699	1302											2259	1557	2533				16300
20 Government capital																201	3400	402						5699
21 Tourism																								19229
22 Exports/imports	5617	354805	594	409	1537	3109	1409					353	139	76	263									404474
23 Foreign capital								130	38	672	409	2514	965	627	2531	1312		12519	713		1606			36192
24 Totals	18099	401901	6900	7500	27399	14100	27800	10232	5515	19026	4426	16533	6673	3165	8991	16931	9300	3356	16300	5699	20799	404474	36192	

that from services. The highlighted data (C) transfer this wage income directly to the respective households.

Highlighted data (D) show payments of entrepreneurial and profit income to households. These data show that, for most sectors, the bulk of the entrepreneurial profit income which is paid to households goes to European-Aruban and expatriate households and relatively little – about 23 per cent of the total – goes to Indian-Aruban and African-Aruban households. The available data reveal that few businesses are owned by Indian-Arubans, and almost none by African-Arubans. Moreover, the businesses which are owned by these groups are generally small and show a low rate of return. Indian-Aruban participation is highest in the construction sector. This sector comprises many small construction firms, and a small number of expatriate and Dutch-owned businesses. A similar division of ownership is found in the tourism sector with bars and restaurants run by Arubans, and large hotels operated by international hotel chains, or government (as public corporations). In contrast, there is relatively strong Aruban participation in the commerce sector but, here again, the most profitable sector, wholesaling, is dominated by European-Arubans and expatriates.

The extent of overseas ownership is seen from the highlighted entries (E). The oil refinery is a subsidiary of an American firm, while the major public utilities (water, electricity and telephone) are Dutch and government-owned, and so make no direct contribution to the non-wage income of households. The table shows that all of the surplus from oil refining (after taxes) and about half of the surplus from tourism goes overseas. The table also shows that these two sectors purchase most of their raw materials and intermediate inputs overseas.

The demand-side of the economy also embodies important characteristics of the cultural matrix, as measured by the material culture of the society through the type of goods consumed. Table 3 shows how expenditures by households are distributed between domestic purchases (F) and expenditures overseas (G). In Aruba, as in most societies, households have expenditure patterns which reflect income levels, as much as cultural traits. For example, lower income households spend more on basic goods and foodstuffs. While there are relatively few culture-specific goods in Aruba, Arubans appear to engage in conspicuous and luxury consumption to a greater extent than expatriates at the same level of income. However, because expatriates and many European-Arubans typically have greater opportunity to travel overseas, they can avoid the high mark-ups on locally retailed products and relatively low interest rates by purchasing and saving overseas. It is estimated that about 38 per

cent of expatriate income is spent or saved overseas, compared to about 17 per cent of the income of Indian- and African-Arubans.

Government expenditure too displays some of the biases of political culture noted earlier. For example, there is discrimination between local and non-local households and firms with respect to taxation. Given that the island tax department is relatively small, it is most efficient to collect revenues from larger firms and better paid expatriates (even though this encourages expatriates to arrange for part of their income to be paid abroad, and provokes international firms to manipulate profits to places with lower taxes). The net effect is that the average tax rate for expatriates and overseas firms is typically higher than for Arubans with equivalent income. This is seen from the entries in (H) which show expatriate households taxed at 16 per cent of total income, compared to 8 per cent for Arubans. Other biases, shown in (I), affect the distribution of public resources and public sector employment between the Aruban sub-cultures. For example, it is estimated that Indian-Aruban and European-Aruban households receive about 90 per cent of government transfers to households.

Table 3. Layout of the entries in the Aruba cultural accounting matrix

Transactions by types of production activity	Household consumption by population sub-groups	Government expenditures by activity	Exports	
Wage income by sub-group (or skill)	Wage transfers to population sub-groups	Investment income by sub-groups	Welfare and wages by sub-groups	Income from abroad
Capital payments by type of Ownership	Allocation and firms by sub-groups	Financial transactions by sub-groups	Foreign investment and Balance of Payments	
Extra-regional trade and payments				
Total expenditures by each activity				

Note: Sub-groups refer to minorities, ethnic or regional groups.

Implications

The cultural accounting matrix describes the structure of cultural-economic relations in Aruba. The importance of the matrix is to demonstrate the implications of particular economic events or policy for various types of businesses, households or government revenues. In particular, many economic policies are designed to improve the relative situation of particular households through income transfers or specific sectoral policy (such as the Arubanization of the economy through the promotion of locally owned businesses). Like the earlier illustrative example, the demonstration here will focus on how the structure of the economy affects inter-group income distribution through the various "trickle-up" and "trickle-down" mechanisms in the Aruban economy. These mechanisms arise because of the internal links in the economy. Thus, income transfers to low income families boost the economy as a whole, and so trickle-up to high income families, and vice versa.

The strength of trickle-up and trickle-down mechanisms may be found by calculating the impact of a given "bonus" to the income of one category of household on other types of household (Cole, 1987a). The bonus might be a consequence of a particular policy, such as new social benefits, or a change in the rate of taxation. The results of providing a fixed increase of NAF 100 to each type of household in turn are given in Table 4. These show that when this new income is paid to Indian-Aruban households it gives rise to a total new income for all households of NAF 183. In other words, the internal links in the economy channel add an additional indirect income of NAF 83 to households, in addition to the initial direct income of NAF 100. The same transfer to African, European and expatriate households generates total new income to all households of NAF 185, NAF 175, and NAF 161 respectively. The totals are greater for the Indian- and African-Aruban households because less of their income is channelled overseas, either as direct or indirect purchases, or as profits and savings. As a result, a given transfer to the lower-income Indian- and African-Aruban households provides a bigger overall impact on the economy than does the same transfer to higher income European-Aruban and expatriate households.

The new income is distributed unevenly across households. A NAF 100 transfer to African-Aruban households, for example, feeds back an extra indirect income of NAF 8, but provides an indirect income of NAF 21 to Indian-Arubans, NAF 43 to European-Arubans, and NAF 12 to expatriates. Thus, of the total indirect income of NAF 85, African-Aruban households receive 9 per cent. The same initial transfer to Indian-Aruban households brings them a total of NAF 121, or 25 per

Table 4. Re-distribution of income between populations

Initial transfer of NAF 100 to:		Indian	African	European	Expatriate
Indirect (NAF):	Income				
Indian		121.0	21.4	19.2	15.7
African		7.7	108.0	8.1	8.9
European		42.9	43.7	138.0	28.8
Expatriate		11.5	11.8	10.1	108.0
Total		183.1	184.9	175.4	161.4

cent of the indirect income, while transfers to European-Aruban and expatriate households leaves them respectively with 50 per cent and 12 per cent of the indirect income. These results show that the distribution of indirect income closely follows the prevailing household income distribution as determined by the existing structure of the economy.

That the distribution of indirect income should so closely reflect the distribution of household income across the economy as a whole may seem surprising, given that the indirect impact of an increase in the level of activity of a production sector on other production sectors, or sectors on households is usually so varied. There are two reasons for this. First,

Table 5. Standardized re-distribution of household income

Initial transfer of NAF 100 to:		Indian	African	European	Expatriate
Indirect income (NAF):					
Indian		84.6	2.5	2.3	1.9
African		1.6	83.4	1.7	1.9
European		4.4	4.5	87.6	3.1
Expatriate		9.4	9.6	8.4	93.1
Cross-transfer net gain (NAF):					
Indian		0.0	1.1	-2.6	-9.3
African		-1.1	0.0	-3.4	-9.6
European		2.6	3.4	0.0	-6.5
Expatriate		9.3	9.6	6.5	0.0

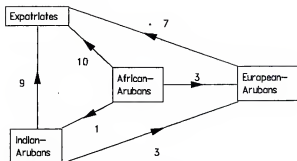


FIG. 2. Net trickle-up effects between sub-groups

with the exception of the rather small payments by upper-income households to domestic servants, there are no first-round transfers between households. Second, in order to ensure that all the aspects of the political economy are accounted for, the calculation has included indirect contributions to household income from the public sector as well as those from the private sector (i.e. as with a Type III or long-term multiplier, see Cole, 1987*b*). The result is that mutual flows between households are averaged by the full structure of the economy.

The results in Table 4 show that the trickle-up flows to the higher-income European-Aruban and expatriate households from lower-income Indian- and African-Aruban households are typically much larger than those in the reverse direction. While this is a consequence of the fact that, when lower-income households receive additional income, they spend it on goods and services whose production generates most wage and profit income for upper-income households, it also depends on the relative numbers of households in the four populations. Therefore, in order to use these flows as a measure of the trickle-up and trickle-down between households, it is necessary first to establish the relative size of the populations. This may be done simply by scaling the results in Table 4.

The "standardized" results based on a NAF 100 transfer to samples each representing 5 per cent of the total population are given in Table 5. The transfer to the African-Aruban sample provides them with an indirect income of NAF 2.0. Again this is less than the NAF 3.1, NAF 5.5 and NAF 11.8 received by Indian-Arubans, European-Arubans and expatriates. In this case the distribution of indirect income reflects the average household incomes of the four populations. One way to consider the overall pattern of trickle-up and trickle-down between the households is

to examine the net flows between them, when each is given a NAF 100 Bonus in turn. For example, the trickle-up effect from African-Arubans to European-Arubans is NAF 5.5, while the trickle-down flow in the reverse direction is only NAF 2.0. Thus, there is a net trickle-up of NAF 3.5. Indeed, there is a net trickle-up income to all other groups from African-Aruban households, including to the Indian-Arubans. Expatriates in contrast receive trickle-up income from all other households. The overall situation of trickle-up and trickle-down between the groups, therefore, may be summarized by Figure 2.

Although this process can be interpreted in terms of the division of labour based simply on an analysis of income structures alone, without any recourse to questions of culture, it is evident from earlier discussion that the economic structure of Aruba embodies a set of "rules" with respect to, for example, the way that private sector incomes, taxation and welfare programmes currently operate, which are determined by the prevailing political culture.

The above calculations of trickle-up and trickle-down suggest that the economic structure of Aruba is likely to reduce the effectiveness of any policies which are specifically designed to reduce present economic differentials, such as welfare benefits or progressive taxes. Furthermore, the same structure-determined processes affect the outcome of any other economic event or policy, whether they be unplanned - for disasters, such as the rationalization or close-down of the oil refinery, or deliberate policy, such as the development of a new tourist enterprise or a targeted development aid project. Moreover, because structures tend to change slowly in relation to the time-scales within which specific policies are designed to act, these processes affect even those policies which are designed to change the cultural division of labour. Since the trickle-up effect is stronger than the trickle-down effect, there is a tendency always for social policy aimed at reducing differentials to be undermined. Thus, it is necessary to compensate for this by making such policies more affirmative than would otherwise be the case.

It follows that, to the extent that one goal of economic and social policy is to foster a more equitable cultural division of labour, the results in this paper have demonstrated that the cultural accounting method provides a viable means of setting out the existing structure, and for evaluating the consequences of particular policies and events in small multi-cultural islands. It should be said that the exposition of the cultural division of labour in any society can be separated to some extent from its causes, its implications, or any judgments about it. In using Aruba to illustrate the method, the purpose of this paper is not to point a finger at this island since, in a good many respects, the cultural divisions and

biases are less apparent in Aruba than in many other societies. Furthermore, it is evident that the cultural matrix of Aruba, as with the majority of islands in the Caribbean, the Pacific and the Indian Ocean, largely reproduces the biases of the external cultures which have successively exercised control over culture-related attitudes and actions.

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